1. A decimation filter for use in A/D conversion, comprising:

     a plurality of FIR filters configured in a cascade
5 connection, each for conducting down sampling,

     wherein

     a coefficient word length of a last-stage FIR filter is
shorter than a coefficient word length which enables desirable
attenuation in an inhibition zone of the last-stage FIR filter,
10 such that there is caused a region where attenuation is
insufficient in an inhibition region of the last-stage FIR
filter,

     a coefficient of the last-stage FIR filter is determined
such that the region where attenuation is insufficient is
15 focused in the vicinity of a Nyquist frequency, and

     a FIR filter immediately before the last-stage FIR filter
is arranged so as to attenuate the Nyquist frequency of the
last-stage FIR filter.

20 2. The decimation filter according to claim 1, wherein

     the last-stage FIR filter and the FIR filter immediately
before the last-stage FIR filter are 1/2x down sampling
filters.

25 3. The decimation filter according to claim 2, wherein

     the last-stage FIR filter has a transmission region of
about 20 kHz or smaller, which corresponds to an audible

bandwidth, and an inhibition region of about 20 kHz to 40 kHz.

4. The decimation filter according to claim 3, wherein the coefficient word length of the last-stage FIR filter is 13 bits.

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5. An interpolation filter for use in D/A conversion, comprising:

a plurality of FIR filters in cascade connection, each for conducting down sampling,

10   wherein

a coefficient word length of a first-stage FIR filter is shorter than a coefficient word length which enables desirable attenuation in an inhibition zone of the first-stage FIR filter, such that there is caused a region where attenuation

15 is insufficient in an inhibition region of the last-stage FIR filter,

a coefficient of the first-stage FIR filter is determined such that the region where attenuation is insufficient is caused focused in the vicinity of a Nyquist frequency, and

20   a FIR filter immediately after the first-stage FIR filter is arranged so as to attenuate the Nyquist frequency of the last-stage FIR filter.

6. The decimation filter according to claim 5, wherein

25   the first-stage FIR filter and the FIR filter immediately after the first-stage FIR filter are 2x down sampling filters.

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7. The decimation filter according to claim 6, wherein

   the first-stage FIR filter has a transmission region of about 20 kHz or smaller, which corresponds to an audible bandwidth, and an inhibition region of about 20 kHz to 40 kHz.

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8. The decimation filter according to claim 6, wherein the coefficient word length of the first-stage FIR filter is 13 bits.

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